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Session D41 - Poster Session I.
POSTER session, Monday evening, March 17
Exhibit Hall D, Conv. Center

[D41.67] Surface Tamm States In The Propagation Of Electromagnetic Longitudinal Waves In Periodic Superlattices

Gerardo Vazquez-Fonseca (IFUNAM), Victor M. Ortega-Montiel (IFUNAM,FCUNAM), Marcelo del Castillo-Mussot (IFUNAM)

We model a system of alternating layers (made of metallic or highly dopped semiconductor) and an interface of other conducting material at z=0 as a system of wells and barriers. The use of ABC's implies the continuity of \mu j and \nu \rho where j and \rho are the current density and electronic density, respectively, \mu and \nu might depend on material. We use the hidrodynamic model to find a dispertion relation for longitudinal electromagnetic modes of the superlattice. This relation is similar to that in the Kronig-Penney model. Using border conditions at z=0 we found an equation for the decaying parameter p. With the use of the equation for the decaying parameter and the dispertion relation of the superlattice we get to equation for the surface modes (also called Tamm states) for longitudinal electromagnitic waves.

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